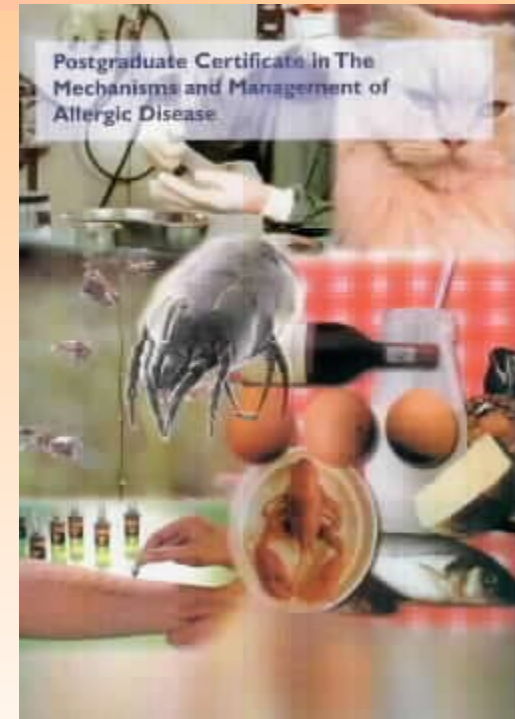


ASTHMA and the WORLD

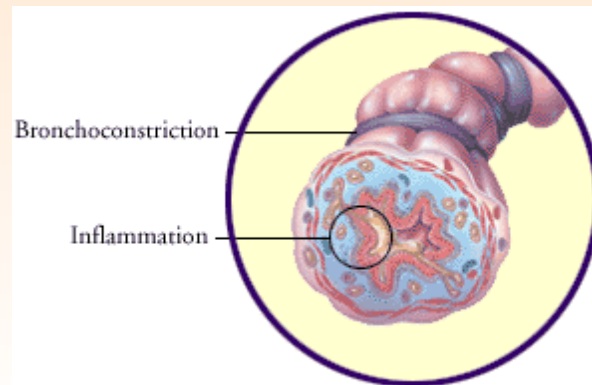


Jacquelyn L. Calbert
July 2005



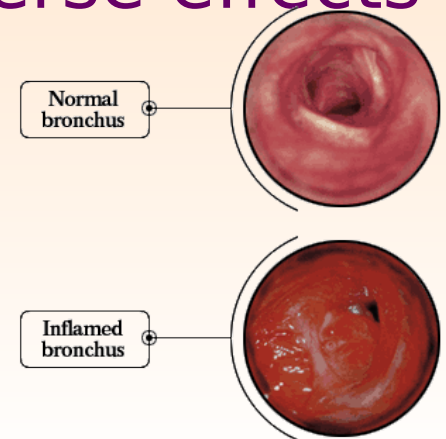
ASTHMA - Diagnosis

- Episodic symptoms of airflow obstruction are present
- Airflow obstruction is at least partially reversible
- Alternative diagnoses are excluded



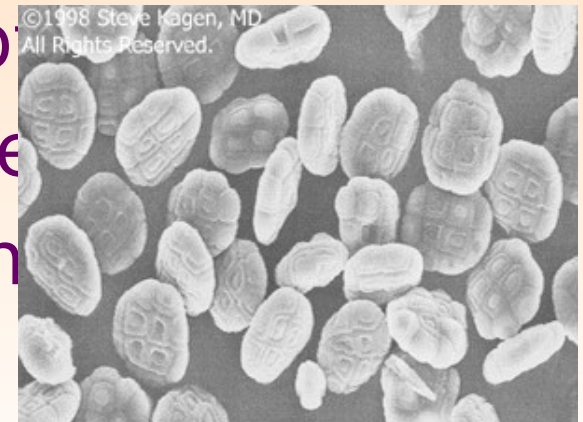
ASTHMA - Therapeutic Goals

- Maintain “normal” pulmonary function
- Hinder chronic and bothersome symptoms
- Prevent recurrent exacerbations and decrease need for emergency care
- Keep activity level normal
- Optimize pharmacotherapy with little to no adverse effects



ASTHMA - Factors

- Inhalant allergens have been shown to:
 - Increase airway inflammation
 - Increase airway hyper responsiveness
 - Increase asthma symptoms
 - Increase medication need
 - Increase asthma deaths



ASTHMA - Factors

- Increased air pollution levels:
 - respirable particulates
 - Ozone
 - So₂
 - No₂
- Reported to precipitate asthma



ASTHMA – Management



- Reduce exposure to inhaled allergens
- Tailor self-management education
- Patients taught to use a written



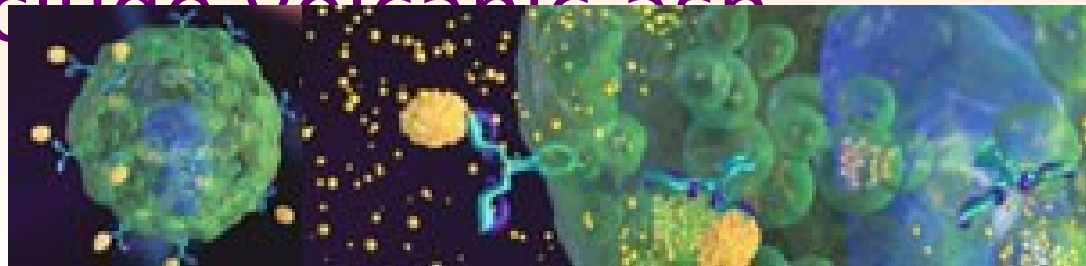
and review



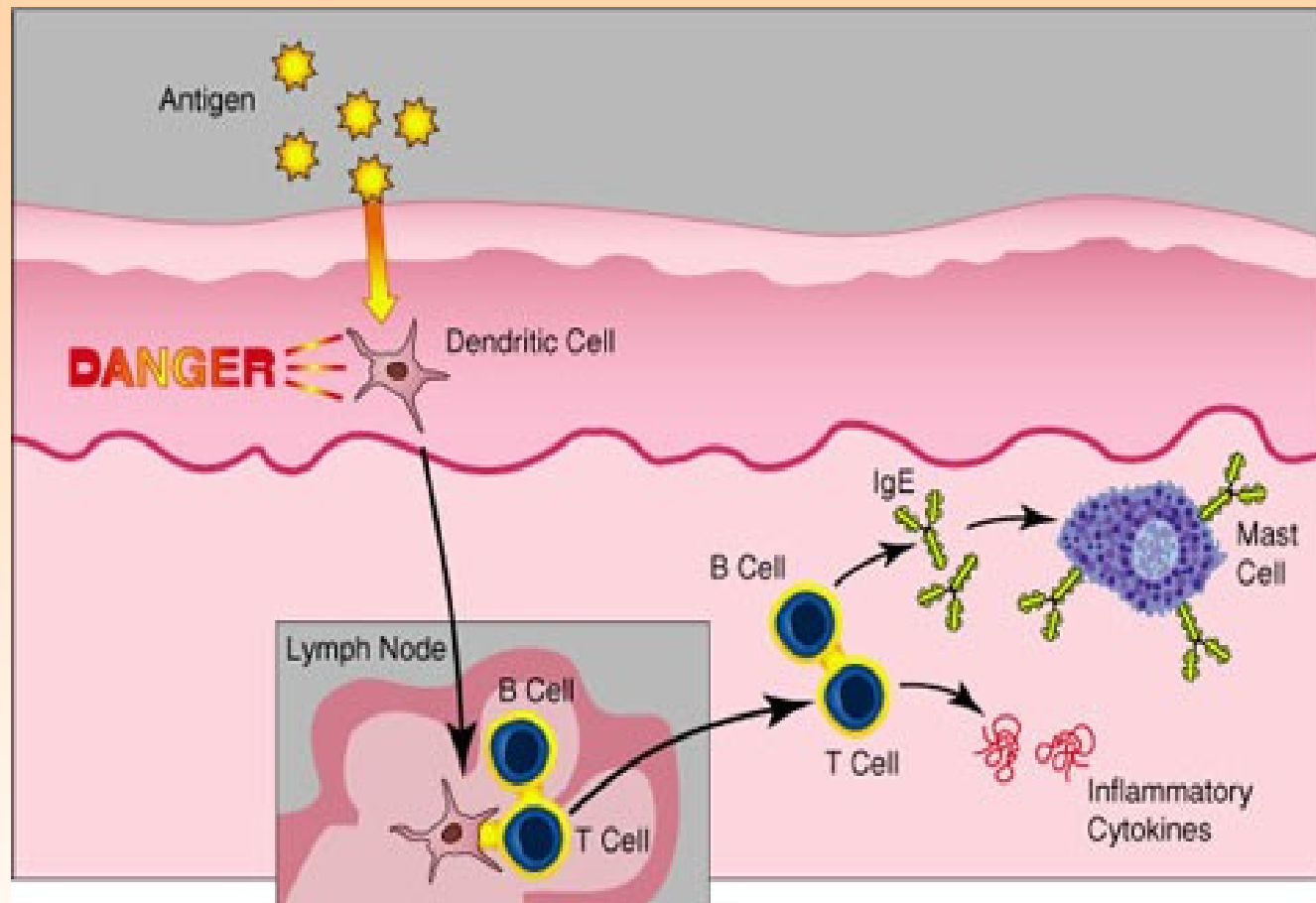
ASTHMA - Assignment



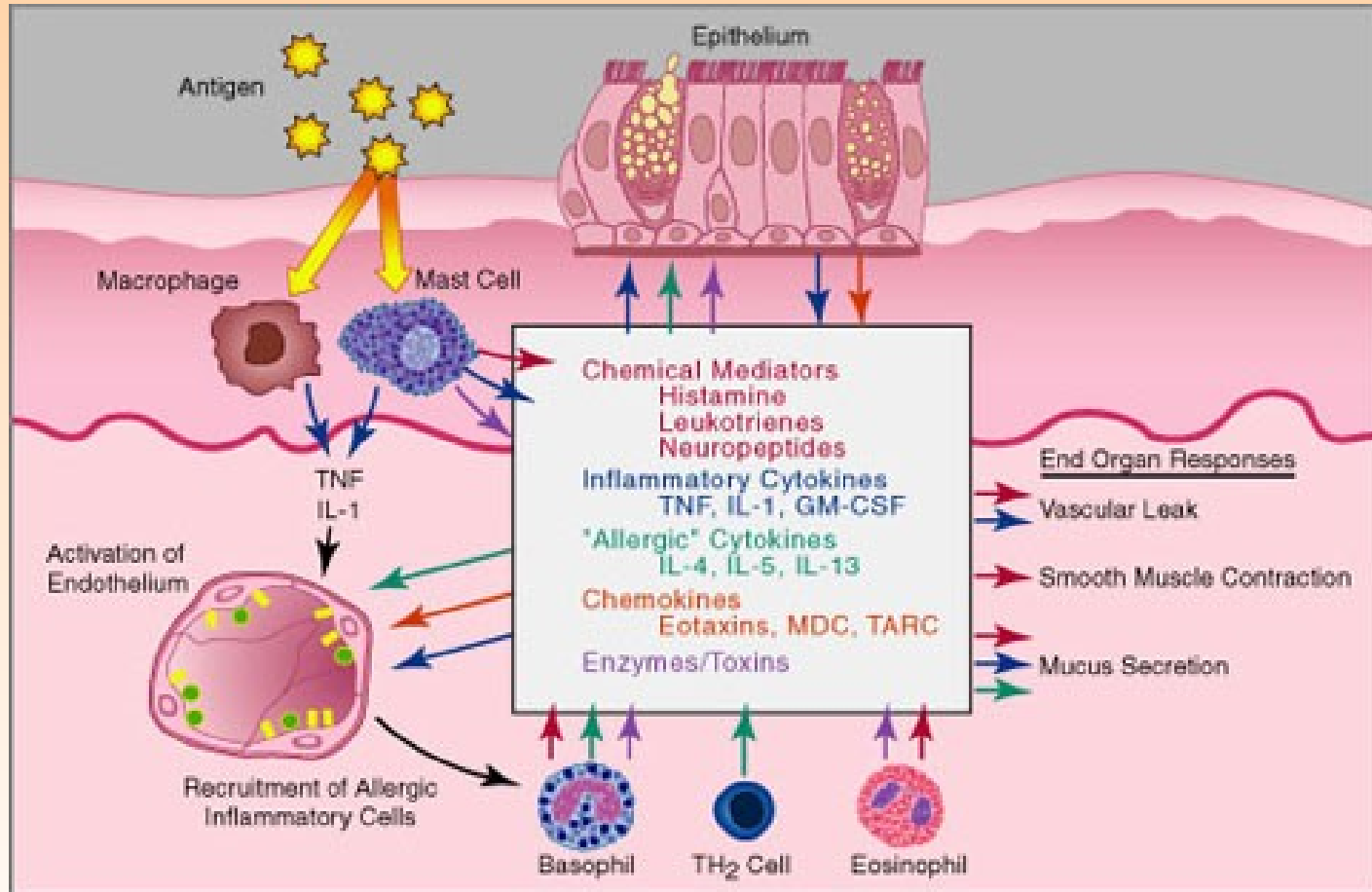
- Number of assignment areas associated with asthma exacerbation
- Many pollens known to cause allergies are documented
- Offending agents suspected also include volcanic ash



Asthma - Mechanism



Asthma - Mechanism



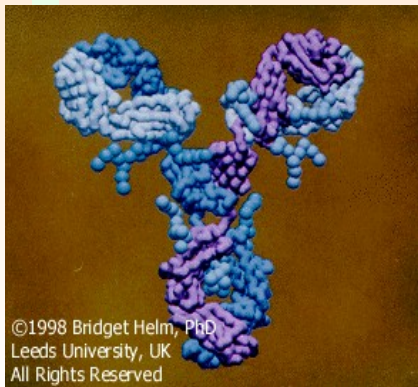
ASTHMA - Pharmacotherapy

- Medication dictated by severity
- Two major classes
 - Quick- relief
 - Long-term-control

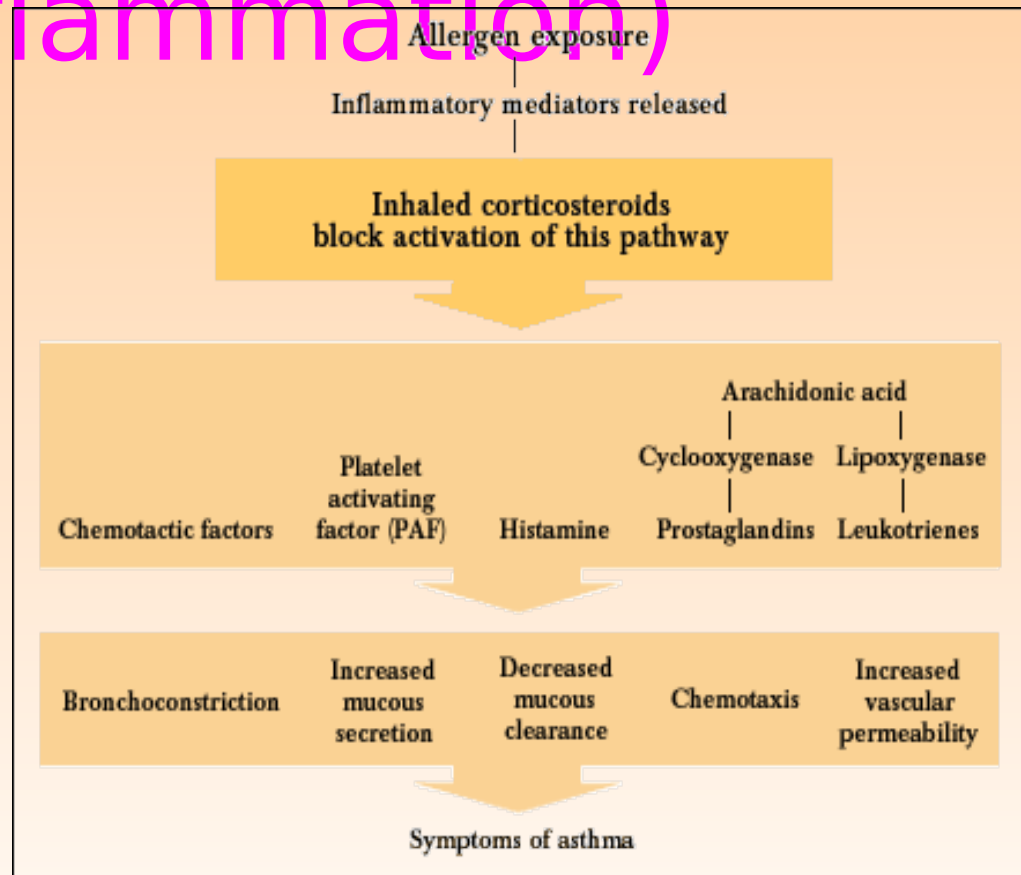


Asthma - Drugs

- Inhaled steroids
 - Anti-inflammatory
 - Maintenance agents
 - Long-lasting control
 - Low risk of systemic effects
- Restriction growth
- Oral candidiasis
- Osteoporosis

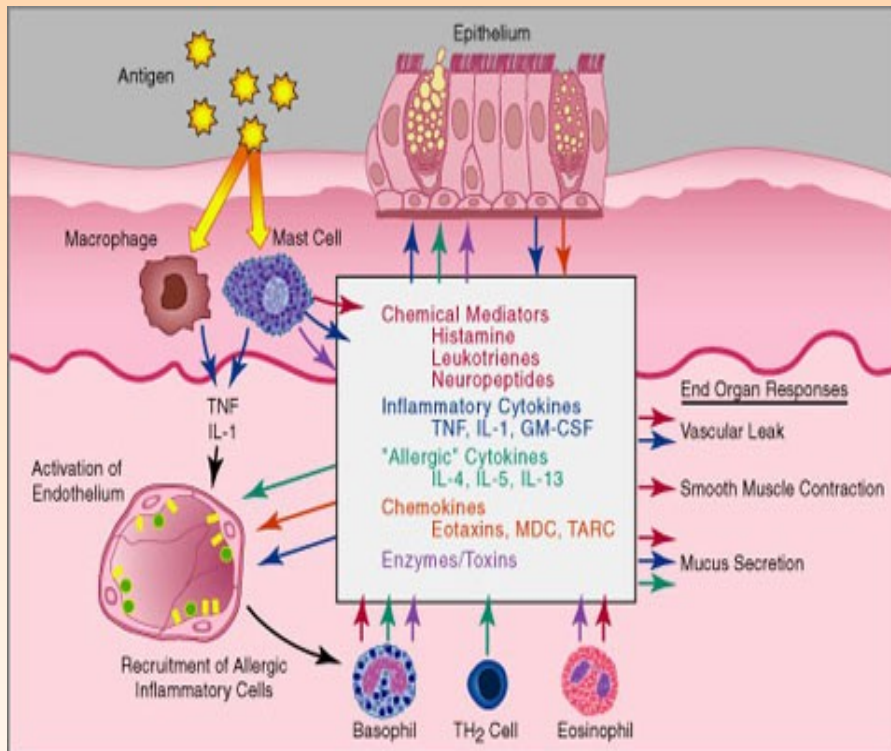


ASTHMA - Drugs (Inflammation)



Courtesy gsk.ibreathe

Asthma - Drugs

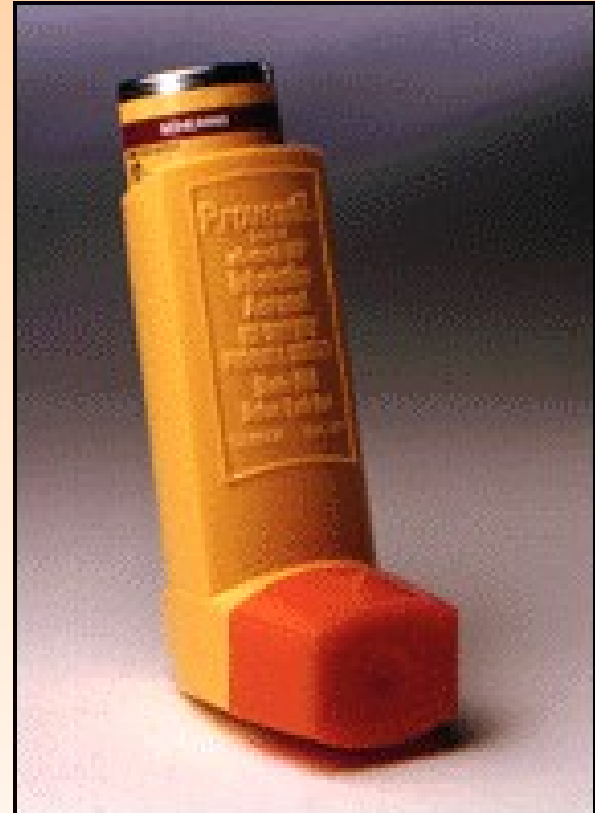


Anti-Leukotrienes-combat Leukotrienes

- Complex molecules
- Generated during allergic inflammation
- Constrict airways
- Induce swelling
- Increase mucus
- Attract more inflammatory cells

ASTHMA - Bronchodilators

- First line treatment
- Relax bronchial smooth muscle
- Increase airway size
- Act quickly (within 1-2 minutes when inhaled)



ASTHMA - Classification

- Old
 - Mild
 - Moderate
 - Severe
- New
 - Mild intermittent
 - Mild persistent
 - Moderate persistent
 - Severe persistent



ASTHMA - Classification

- Symptom severity

- Mild intermittent

- Mild persistent

- Moderate persistent

- Severe persistent

- Days
Nights

- $\leq 2/\text{wk}$

- $\leq 2/\text{mo}$

- 3-6/wk

- 3-4/mo

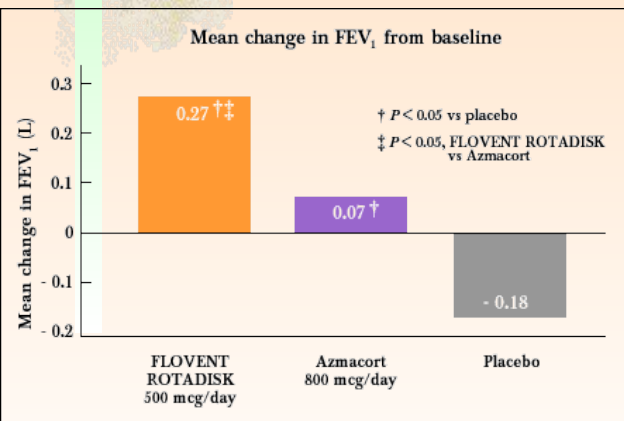
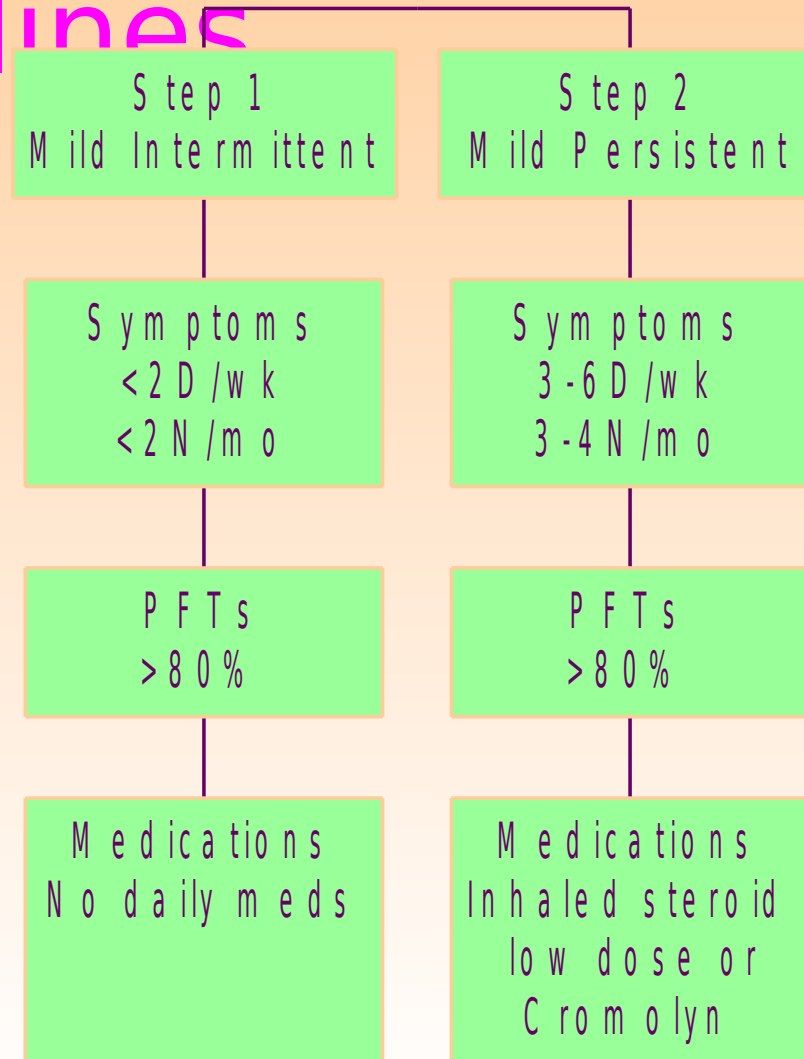
- Daily

- $\geq 5/\text{mo}$

- Continual

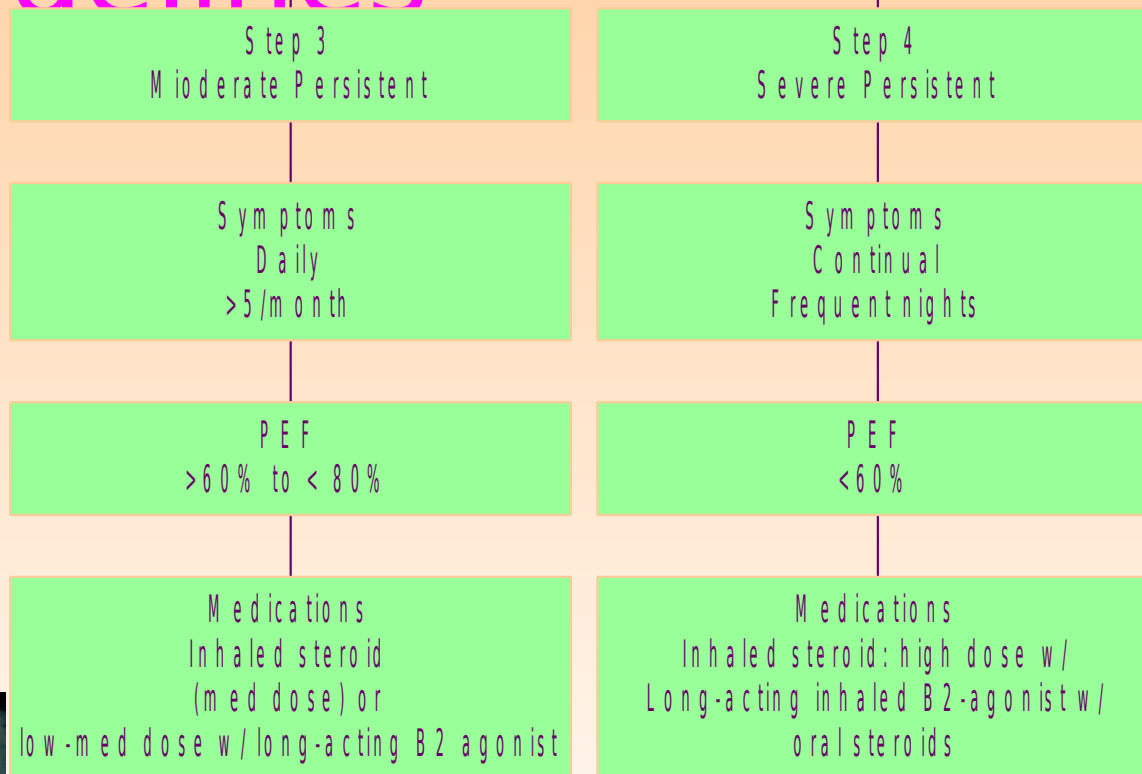
- Frequent

Asthma Management Guidelines



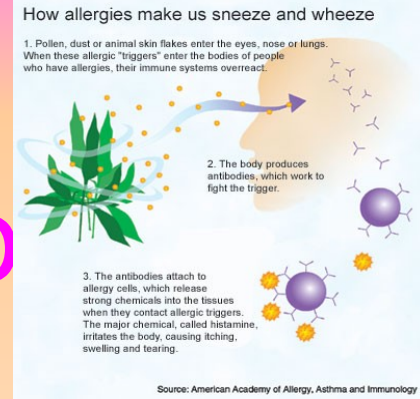


ASTHMA Management Guidelines



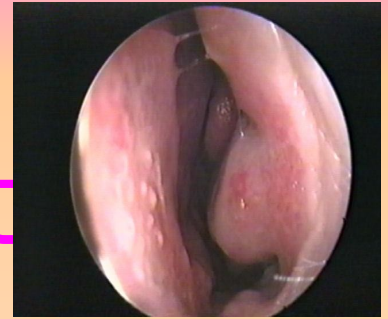
ASTHMA - Associatio

- Children with allergic rhinitis likely to develop asthma
- Study in the journal of allergy and immunology found significantly less children had asthma after given immunotherapy



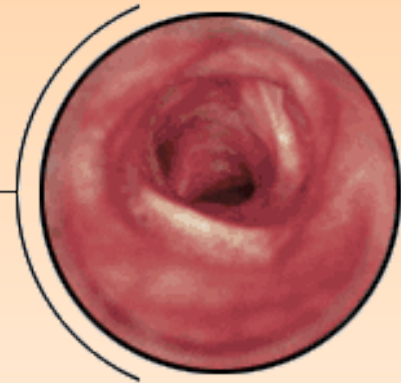
ASTHMA - Complications

Nasal Mucosa

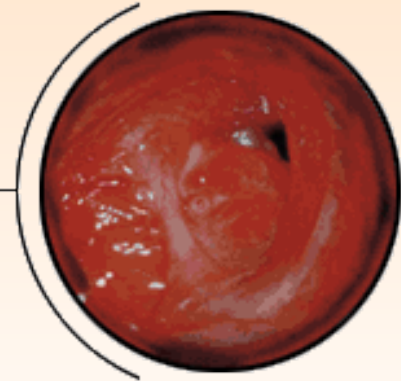


- Individuals with asthma suffer decline in FEV1
- May be related to subepithelial layer thickness
- Correlates with degree of disease severity/inflammation

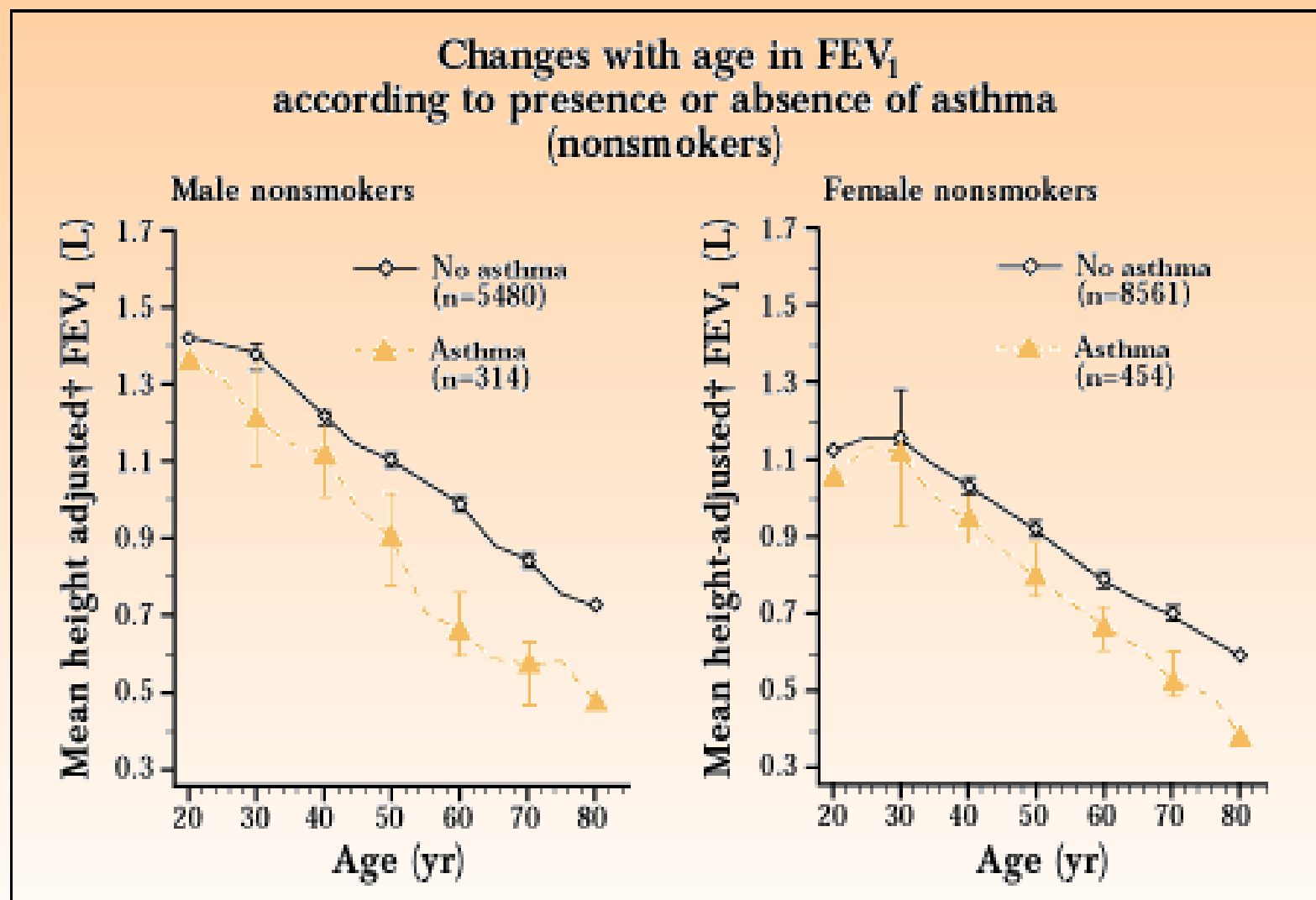
Normal
bronchus



Inflamed
bronchus

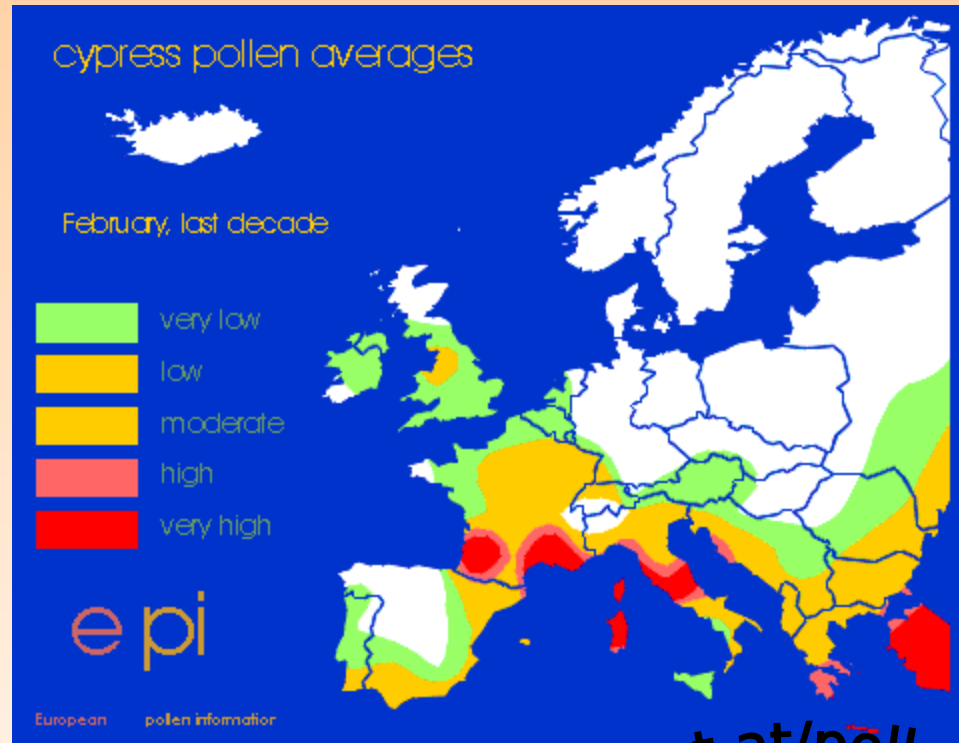


ASTHMA - Complications



ASTHMA - Pollen Count

Europe

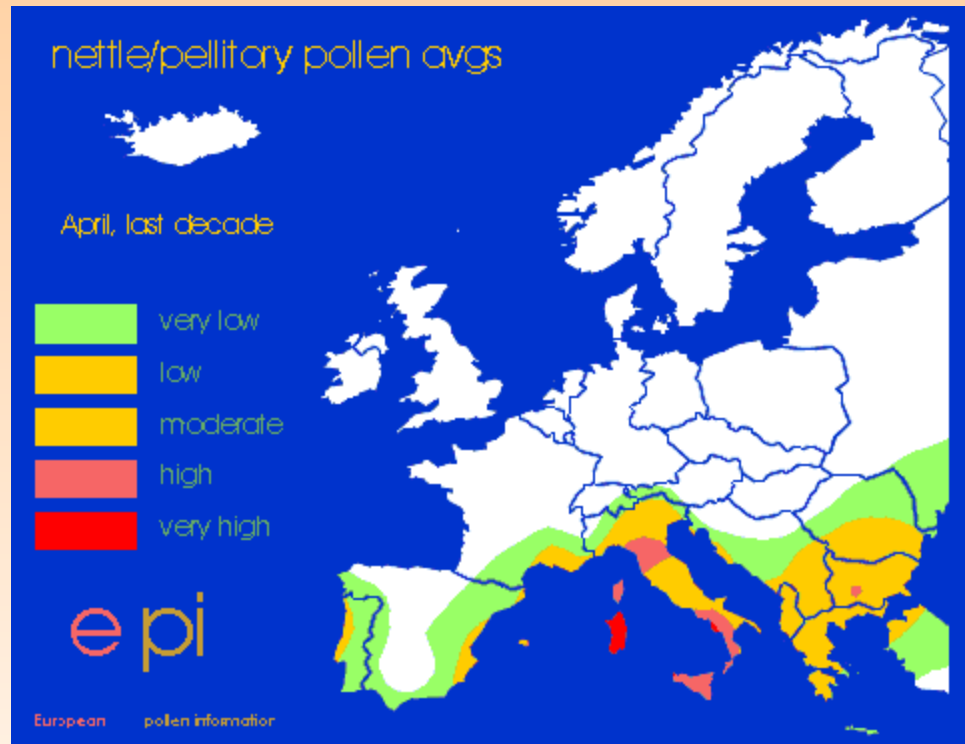


cat.at/pollen

Cypress is moderately high and increasing

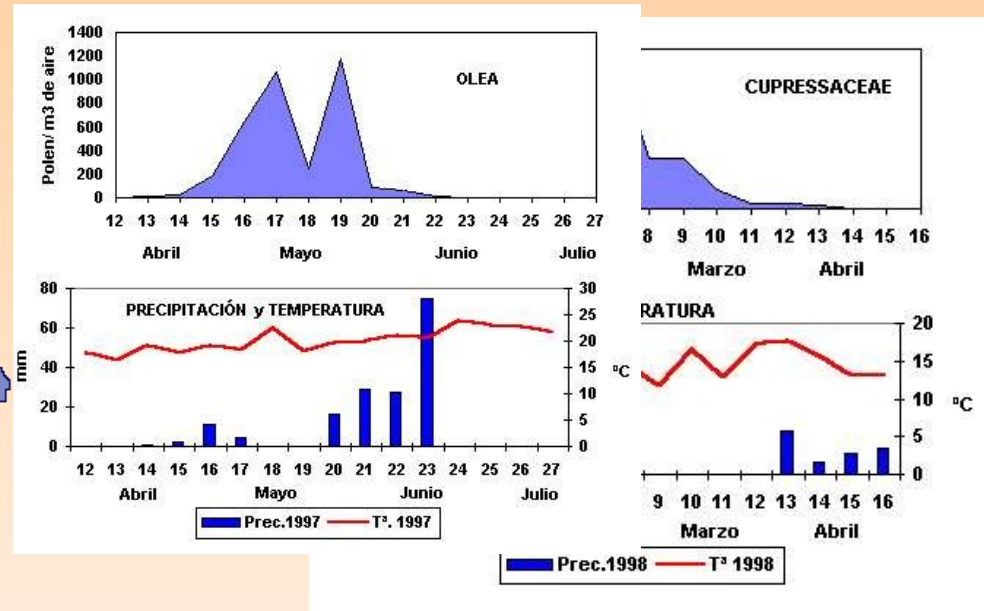
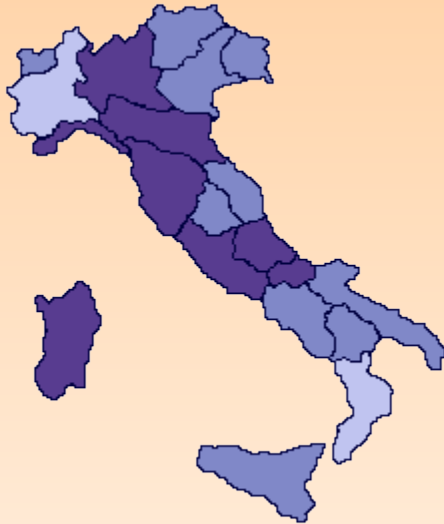


ASTHMA - Pollen Calendar Europe



Pellitory

ASTHMA - Pollen Count



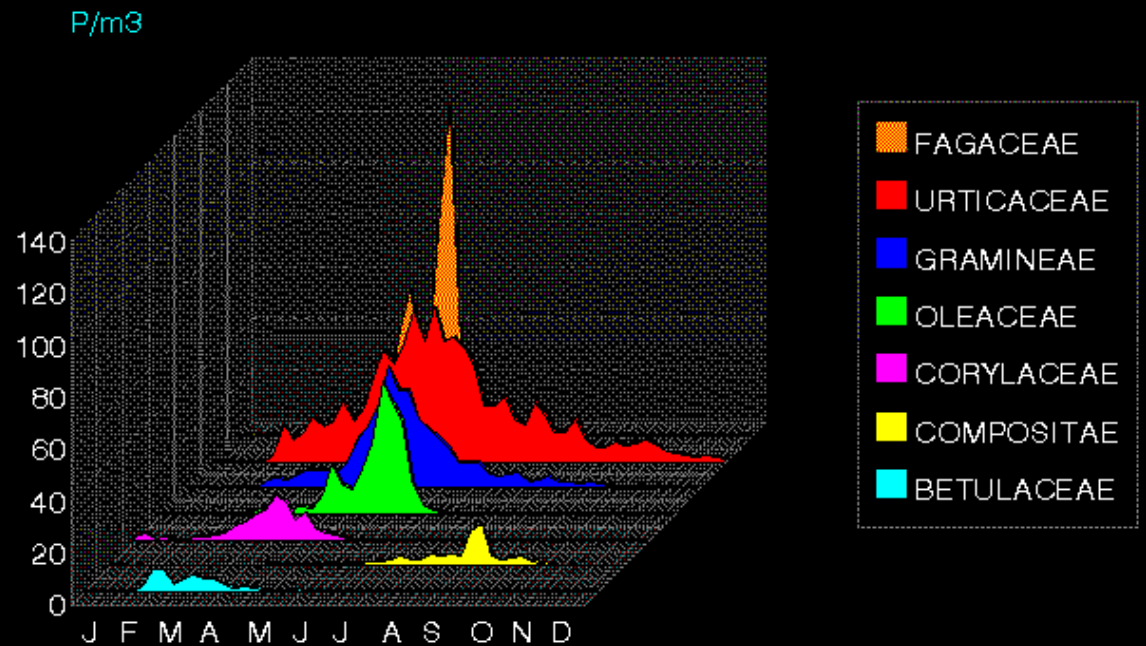
Cypress is moderately high and increasing

Pellitory is moderate and rising

ASTHMA - Pollen Count



Pollen calendar: S.TYRRHENIAN



AdA-ITALY

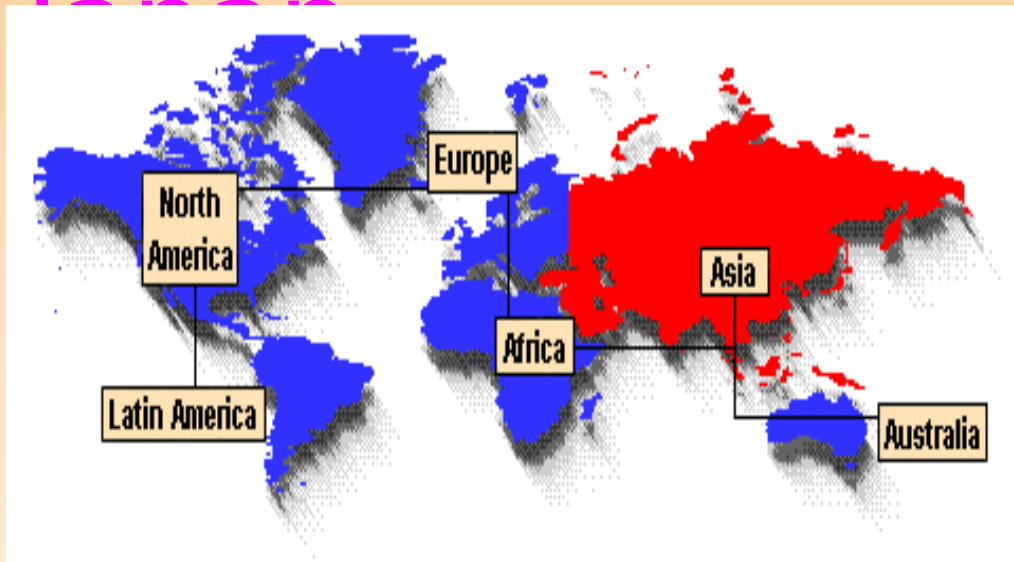
Naples

ASTHMA - Volcanic Ash



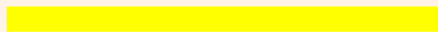
Mt. Etna

ASTHMA - Pollen Calendar



Jan Feb Mar April May Jun July August Sept

Trees
Grasses
Weeds



Japanese Cedar is major cause of allergy symptoms

ASTHMA - Air Quality

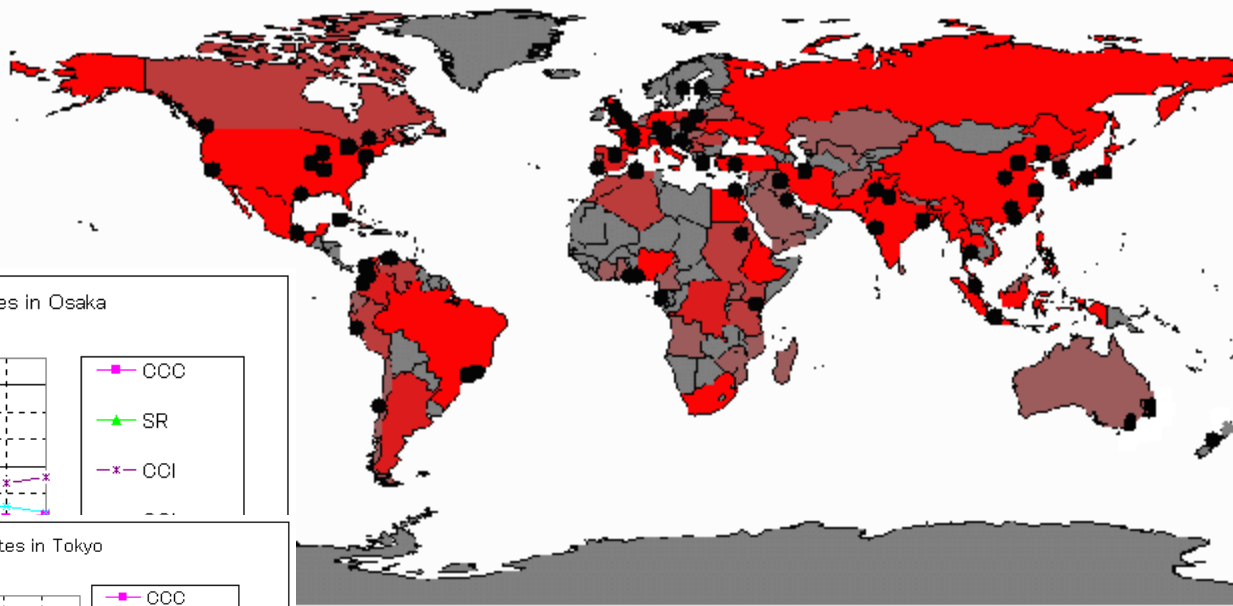
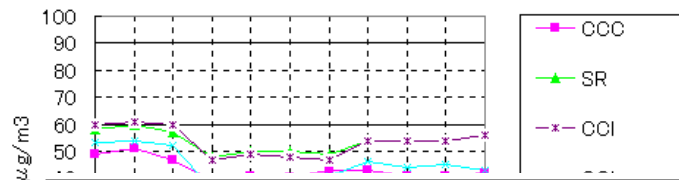
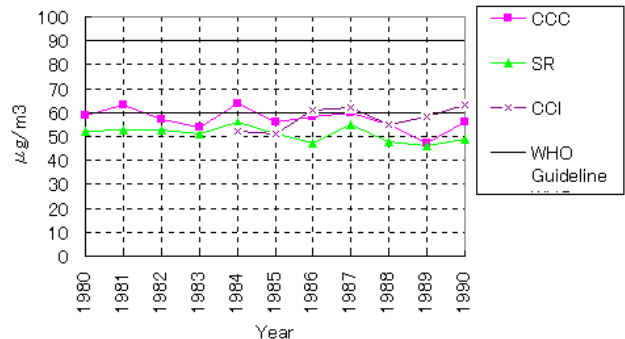


Fig.3 GEMS/Air Monitoring Sites

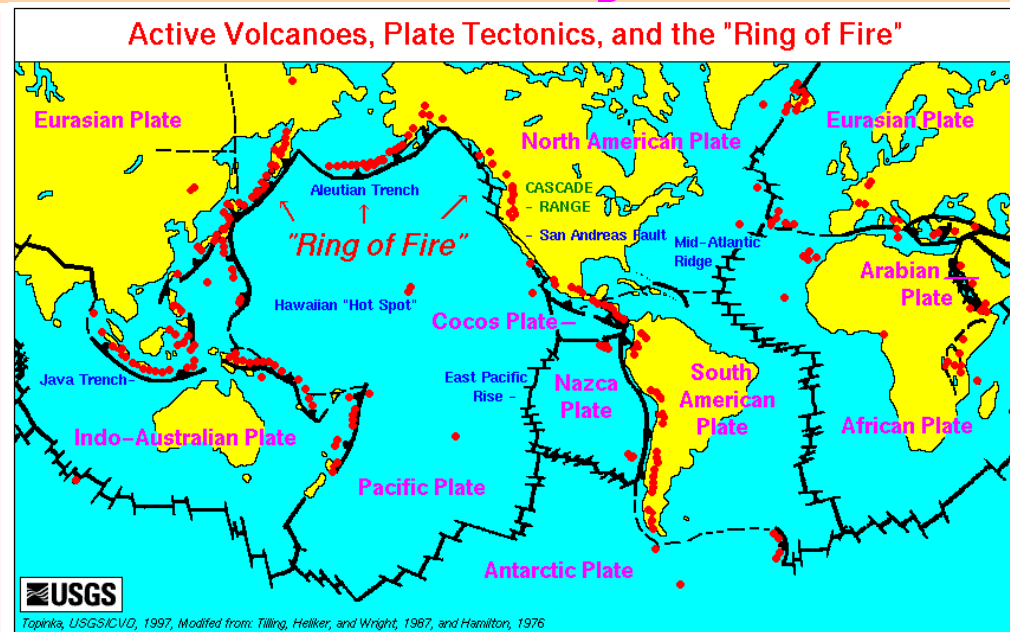
SPM Concentration of 4 Sites in Osaka



SPM Concentration 3 Sites in Tokyo



ASTHMA – Air Quality



Miyake-Jima mild explosion April 2002

ASTHMA - Volcanic



Mt. Fuji



Suwanose-jima

Asthma – Volcanic Ash



USGS Photo by D. Harlow, June 12, 1991

ASTHMA - EFMP

Categories

Cat 1
No
Limitations

CAT 2
Pinpoint
Overseas

CAT 3
No
Overseas

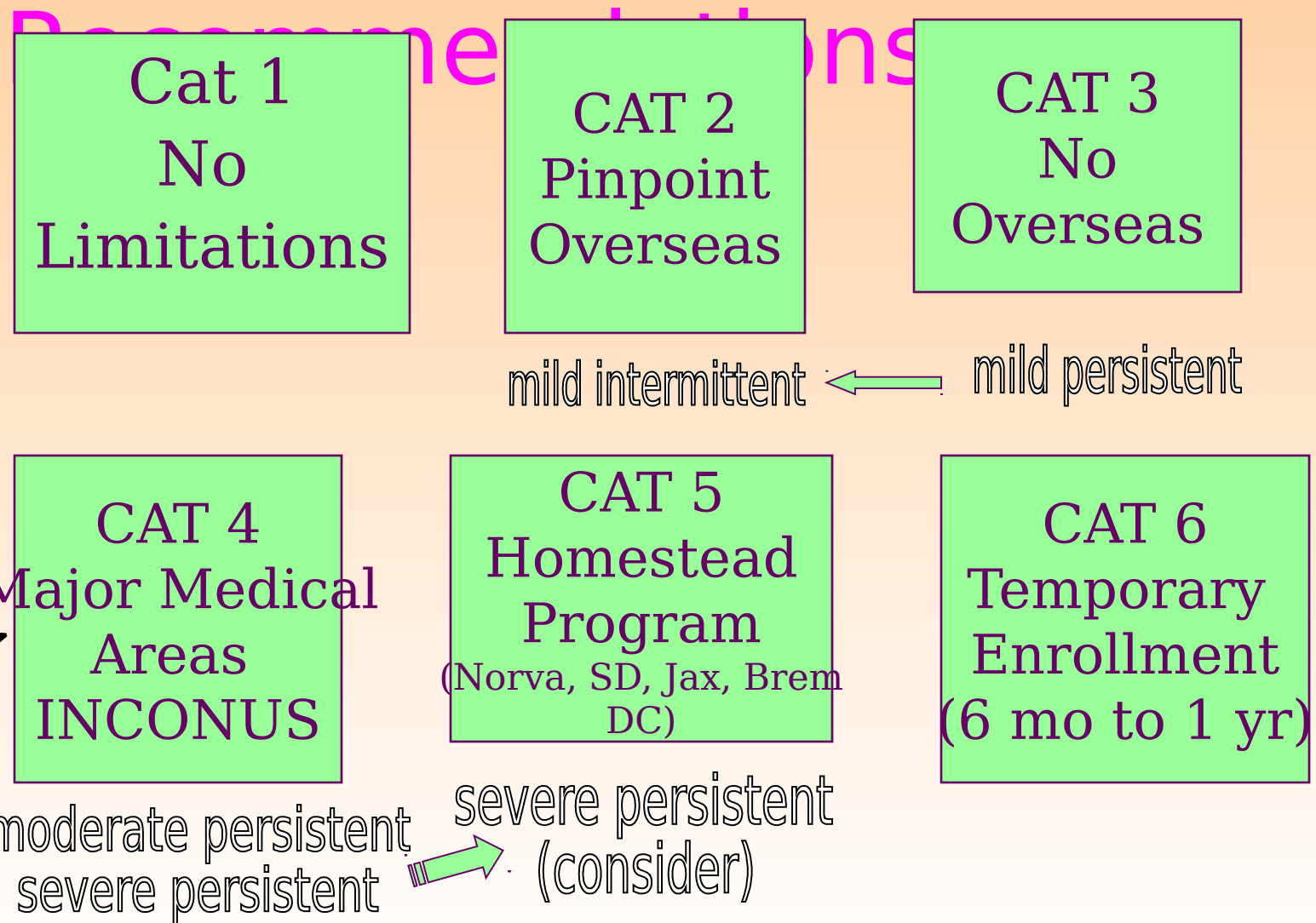
CAT 4
Major Medical
Areas
INCONUS

CAT 5
Homestead
Program
(Norva, SD, Jax, Brem
DC)

CAT 6
Temporary
Enrollment
(6 mo to 1 yr)



ASTHMA -



ASTHMA - Summary

Step wise approach to asthma care established

Regular follow up recommended

Moderate to severe cases may require specialist

Assignment coordination is key

